

## ABSTRACT OF THE DISCLOSURE

[0061] Methods and systems are provided for adapting signals from an ultrasound transducer for an ultrasound system. Where the signal processing in a transducer assembly outputs data incompatible with the ultrasound system, circuitry provided within the transducer assembly converts the data to be compatible with the ultrasound systems. For example, sub-array mixing is provided to partially beamform signals from a plurality of transducer elements. The resulting output signals from a plurality sub-arrays are provided through a cable to a connector housing of the transducer probe assembly. Since the mixers alter the data, such as shifting the data to an intermediate frequency, the output data may be at a frequency different than the frequencies for operation of the receive beamformer. Additional mixers are then provided to convert the intermediate frequency signals to radio frequency signals that may be processed by the ultrasound systems received beamformer. As another example, signals from a plurality of transducer elements are multiplexed together. Where the receive beamformer is not operable to de-multiplex such signals, circuitry within the transducer probe assembly converts the signals by de-multiplexing the data for beamforming. Ultrasound systems have a limited number of received beamformer channels. By providing signal processing, conversion, and/or partial beamforming within the transducer probe assembly, the number of elements used may be different than the number of received beamformer channels provided by the system.